



SERIES
25

MILITARY VEHICLE PRINTS



SERIES TWENTY FIVE

Soviet T-34/76A Medium Tank-1939

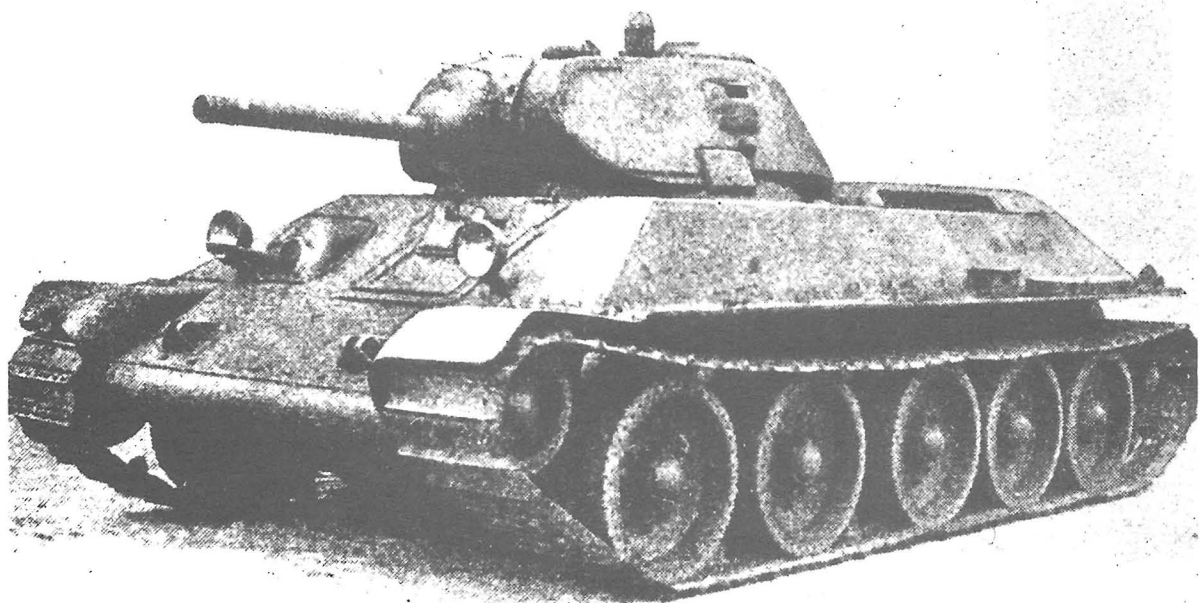
Churchill Bridgelayer

Armoured Car T18E2

"Boarhound"-1941/43

DETAILED PLAN VIEWS PRESENTED IN 1:76 & 1:48 SCALE

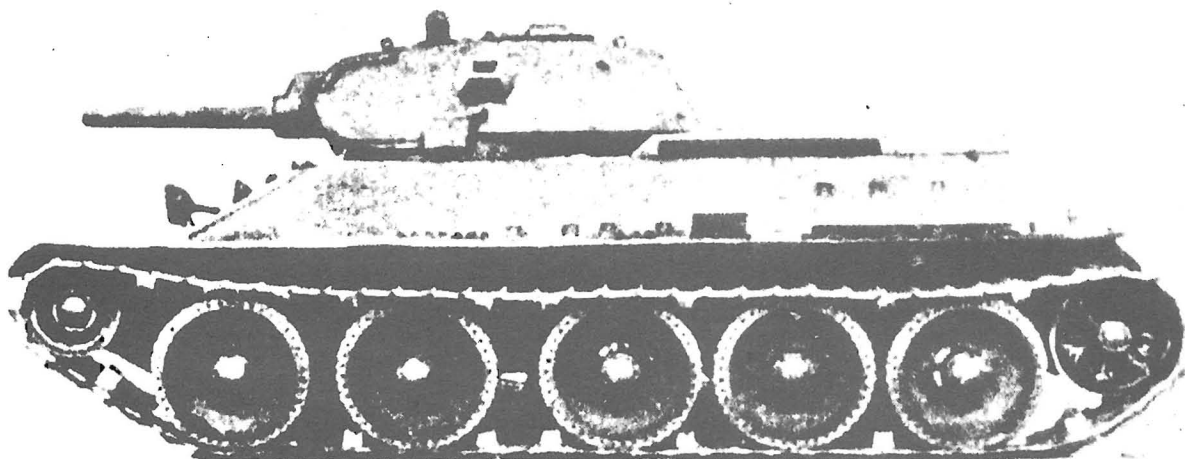
20p
BELLONA
40p



ABOVE: Only about 1100 examples of the Soviet T-34/76A were built commencing in June 1940. The German assault on Russia began on the 22nd of June 1941 and the first T-34 tanks were encountered shortly after. The 18th Panzer Division for example met them for the first time on the 2nd July 1941. However, not many appear to have been the T-34/76A as so little pictorial evidence exists of their use, hence the poor quality of these two photographs. However, the clean sloped outline that revolutionised tank design throughout the world is clear. The main recognition feature of the A version was the small cast gun mantlet, short 76.2mm gun, and welded turret.

COVER ILLUSTRATION: Drawn by George Bradford.

As far as can be deduced from the few records that exist, these early T-34/76A tanks were generally painted overall with the standard olive green. The drawing depicts an example operating in the winter snow covered forest areas. Note the clumsy turret hatch which occupied most of the rear of the turret and obscures the commanders' vision. The rear plate could be unscrewed from the hull to allow easy access to the transmission, a particularly fault prone unit, and to the engine.



During the 1930's a famous Soviet tank designer, M. I. Koshkin (who eventually became chief designer at the 'Komintern' factory in Kharkov), experimented with wheel/ track variants of tanks based on the famous American Christie suspension system. During 1938, he submitted a report to the Soviet High Command stating that complexities of producing wheel/track tanks was not justified by their performance, and hence recommended that the current wheel/track design, the A-30, should be dropped. Although not wholly convinced, the Soviet High Command authorized Koshkin to produce a pure-track version of the A-30 with increased armour and a 76.2mm gun. This vehicle, called the T-32, was subjected to extensive trials from which it emerged most satisfactorily. As the result, Koshkin was authorized to develop this design with minor changes into a further medium tank the T-34. The first model, T-34/76A (not called so by the Russians, since they never adopted a nomenclature for distinguishing between models the 'A' designation was given by the Germans has been continued,) was released for production on 19th December 1939. It eventually proved to be one of the most revolutionary, most successful, tanks designs in the World. This first model of the T-34 began to leave the production line during June 1940.

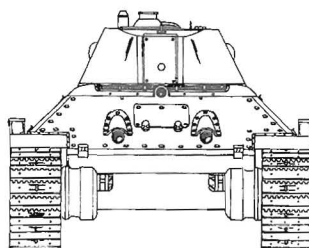
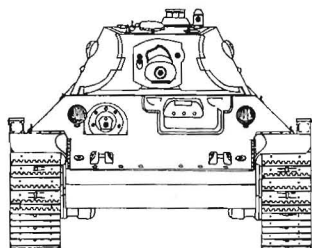
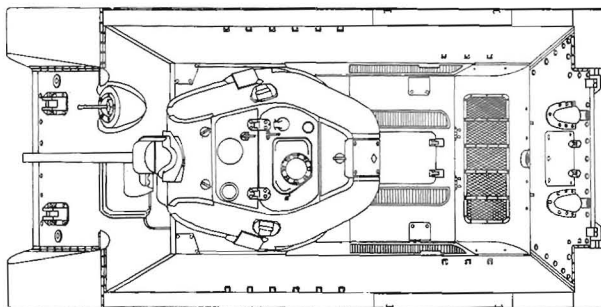
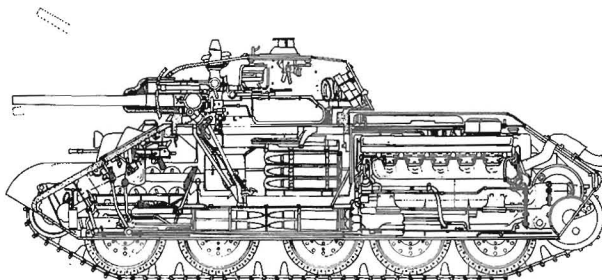
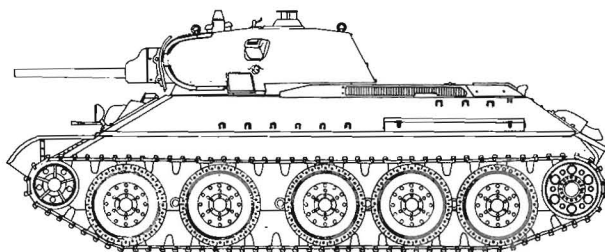
The tank hull was made of rolled armour plate, electro-welded, although the upper rear plate and the engine cover plate were fastened by screws for quick removal. In the driving compartment were located the driver-mechanic and the hull machine-gunner. Some ammunition was stowed here, radio equipment was located here also but only in platoon, company or higher commanders' tanks. The driver had a foot pedal (called 'desantov') which could set off a device to make the tank immobile, even under enemy fire. The driving compartment led directly into the fighting compartment. On the floor and walls of the fighting compartment were located the main ammunition compartments. On the sides of the hull were located the fuel tanks, together with compartments of the suspension. The suspension was a modified Christie type. The cast turret, which on this first model contained two men, mounted the 76.2mm L-11 or F-34 gun and a coaxial DTMG. The commander functioned also as the gun layer. The turret could be traversed either by electric motor or hand.

A metal wall separated the fighting compartment from the engine compartment. Here was located the V-2-34 diesel engine together with fuel-injection, cooling, lubrication and ignition systems, and four batteries. The tank was steered by the clutch and brake method.

The transmission compartment, at the extreme rear of the tank, contained the main gearbox, clutch, final drives and brakes. Here also were an electric starter, a transfer box and two auxiliary fuel tanks. Only about 1100 of these tanks were produced, by which time the successor model - the T-34/76B appeared.

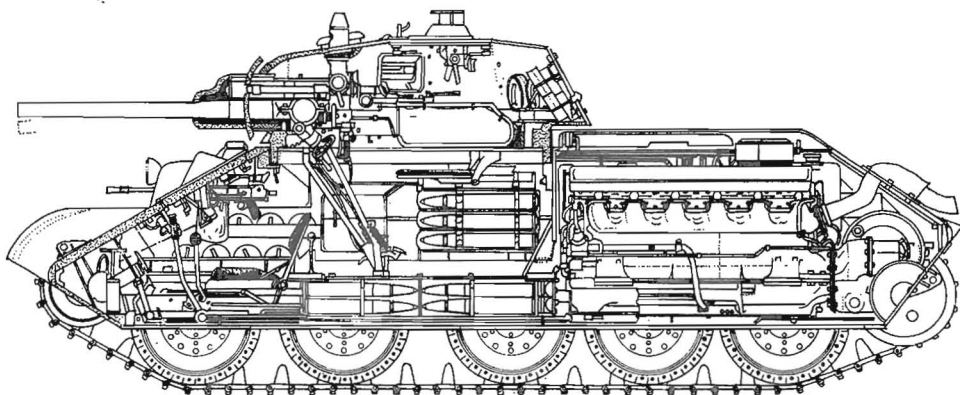
Due to the rapidity with which the first T-34's were turned out and issued to units, it was not possible for some of the component plants to keep inline; a shortage of the new V-2 diesel engines necessitated some early T-34's to be equipped with the older M-17 petrol engines of the BT-7 tank. A hasty demand for a large number of the transmission assemblies also caused serious repercussions; the earlier units were so unreliable that tanks went into battle with spare transmissions secured to the engine compartment deck by steel cables.

On the early model the turret hatch was clumsy - occupying the entire rear half of the turret, which made it heavy to lift and also blocked the view of the commander when open. Only one periscope was fitted on the turret roof, at the front on the lefthand side. Some later models of the T-34/76A had the cast turret of the Model B but with the original model A type gun cradle and short 76.2mm gun (L-11). Some of these tanks were later provided with long 76.2mm guns (Model F-34).



Scale 1:76 (4mm to 1 foot)

T-34/76 Medium Tank



Section view of T.34/76A Medium Tank section.

1:48 scale (1/4" to 1' 0").

Technical Specification for T34/76A

Crew: 4
Weight, combat loaded: 62,272 lbs.
27.8 Long Tons, 31.14 Short Tons,
28.24 Tonnes.

Performance

Speed, Max. Road: 32 m.p.h. (52 Km.p.h.)
Max. Gradient: 35 degrees
Fording depth: 4' 6" (137 cm) (unprepared)
Trench crossing: 9' 8" (295 cm)
Step: 2' 4" (71 cm)
Min. turning circle: 25' 0" (7.62 metres)
Ground pressure: 9.1 lbs/sq. in. (0.639 Kg/sq. cm)
Range (internal fuel):
road: 280 miles (450 Km)
188 (main Tanks)
280 (wall Tanks)

Power to weight ratio: (Net/Gross) 17.9 HP/ton
(19 HP/ton metric HP/ton)

Dimensions

Length overall: 20' 0" / 21' 6" (610 cm)*
Length: 20' 0" (610 cm)
Width overall: 10' 0" (305 cm)
Width: over tracks 10' 0" (305 cm)
Height: 8' 1" (246 cm)
Ground clearance: 1' 4" (40.6 cm)
Fire height of gun: 6' 0" (183 cm)
Turret ring dia: 5' 6" (168 cm)
Road wheel dia (overall): 2' 8" (81 cm)

Trackwork

Centres: 8' 6" (259 cm)
Length on ground: 12' 9" (389 cm)
Width: 1' 8" (50.7 cm)
Pitch: 67/8" (17.4 cm)
Number of links per Track: 72
Type: Cast manganese steel, Dry pin
(Bushless) centre guide horn; on each alternative shoe.

Mechanical Details

Engine:

V-2-34

Model V-2-34 V12 water cooled 38.9 litre diesel, developing 500 bhp @ 1,800 rpm. (60° 12 cylinder engine). Sliding mesh 4F1R gearbox thru' single spur reduction gears to rear sprocket. Clutch and Brake. Russian developed Christie type. Double-ribbed cast roller bogie wheels the 3 rear wheel on each side are equally spaced at 34.2", whilst the 2 front bogies are 40.5" on either side.

Transmission:

Steering:
Suspension:

Armament

Main:
Calibre and length in
calibres:
Traverse:
Operation:
Elevation:
Sight and vision:

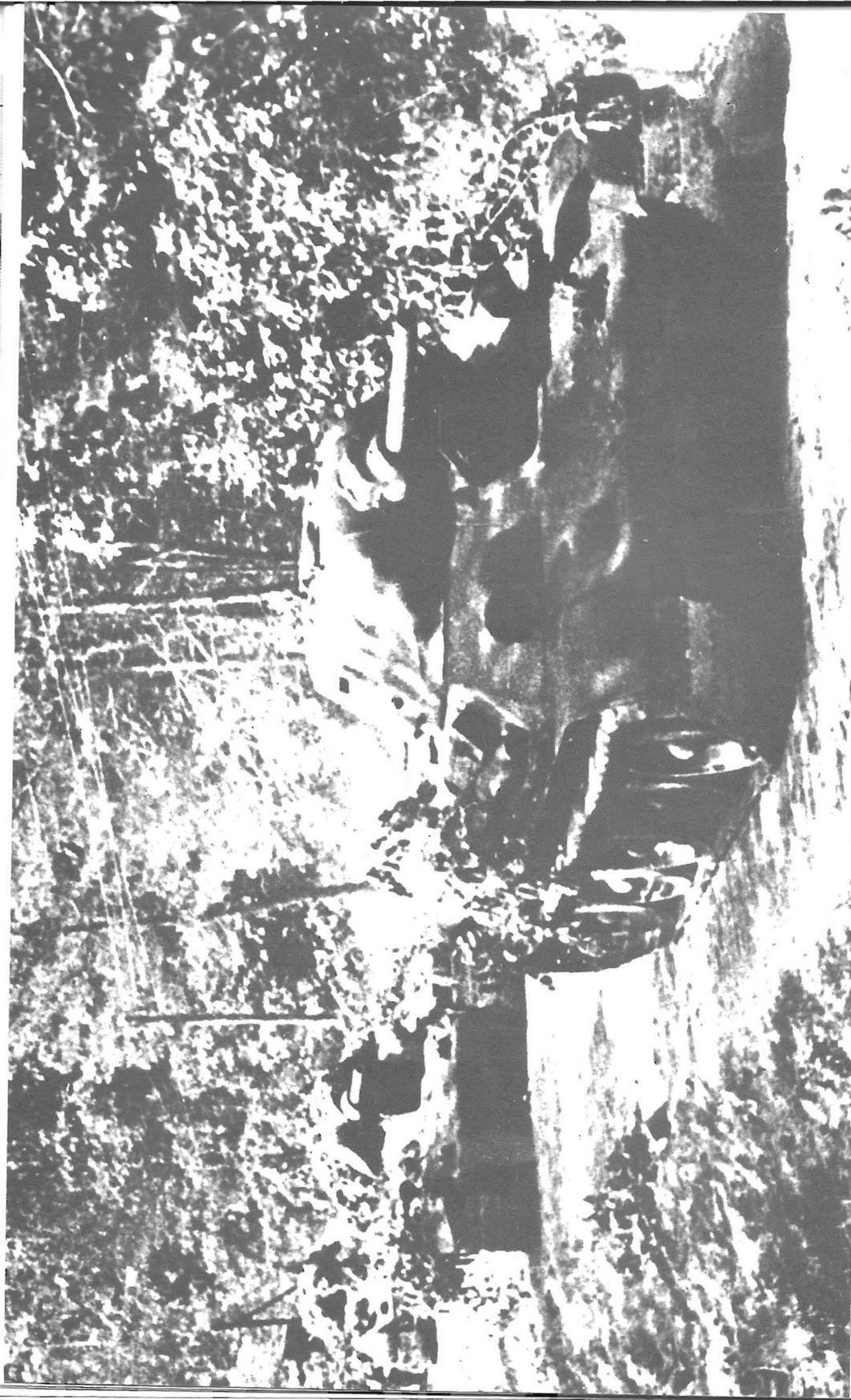
76.2mm Tank gun, Model 1938 (L-11)
76.2mm/cm (3.00 in)
L/30.5 or L/41.2
350 degrees.
Hand or electric from vehicle batteries
plus 30 degrees, minus 3 degrees.

Sight:

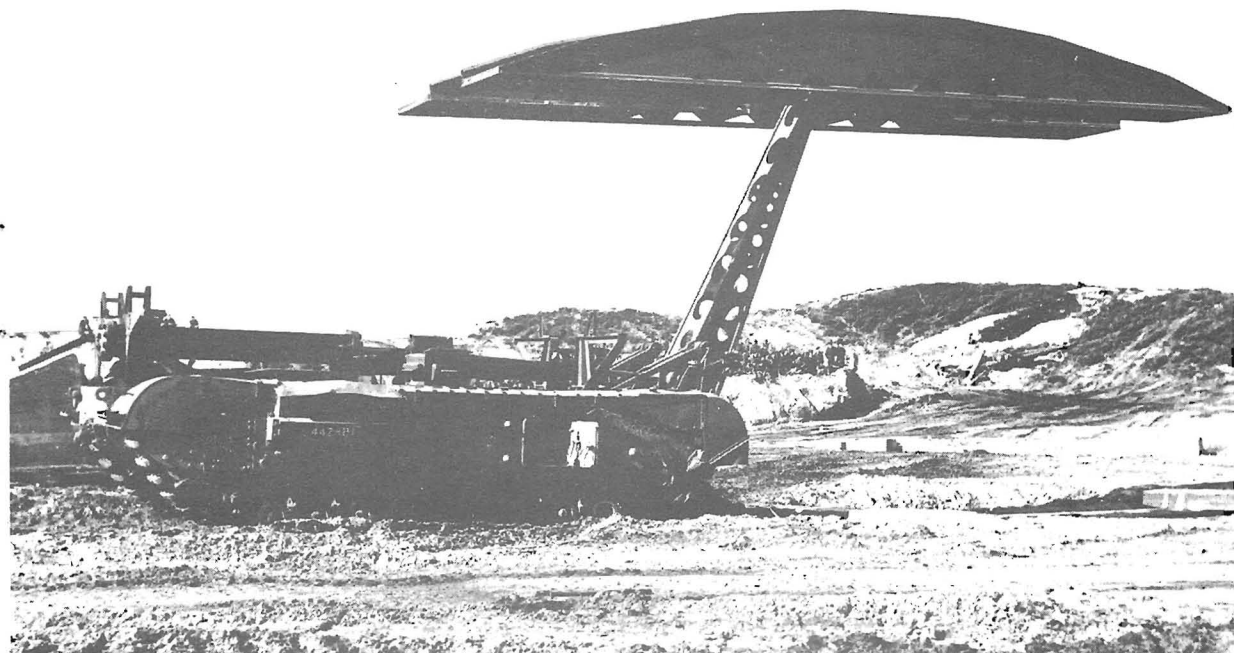
Vision:

One periscope dial sight PT-4-7 or one cranked telescopic sight type TMFD. Driver has 2 episcopes, commander and gunner each have an episcopes.

*with short/long 76.2mm gun (both used).

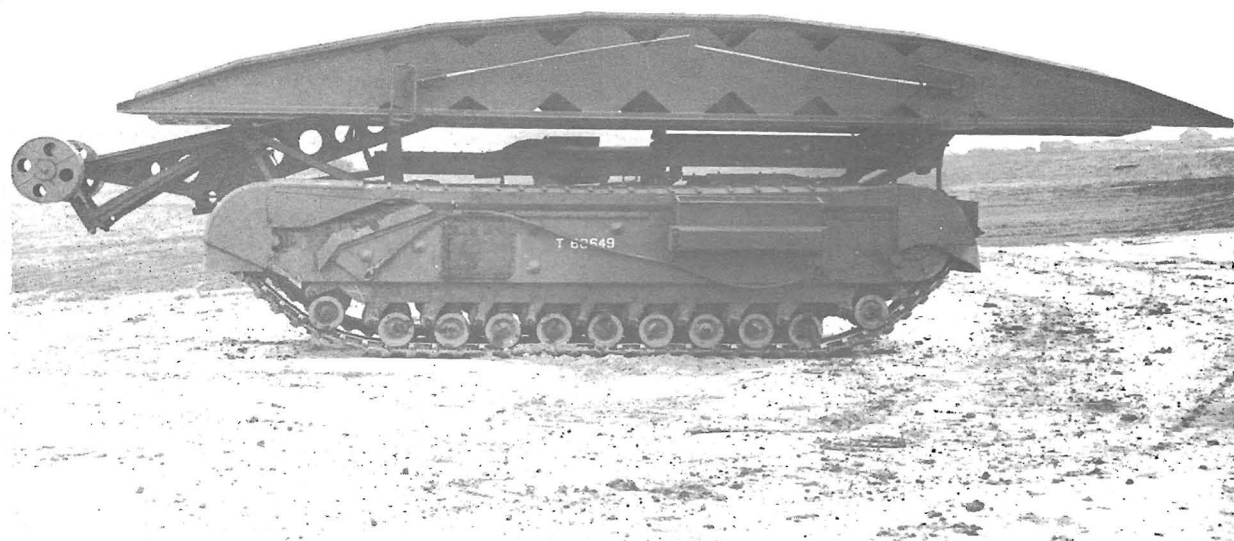


The Soviets never gave the T34 any model designations - these were given by the Germans to aid identification - the first vehicle here shows interesting mixture of two different models. It is a T34/76 by nature of the general layout and armament, the short 76.2mm, but it is fitted with the cast turret of the T34/76B. Note the original mantel. The tanks following appear to be the normal T34/76A.



ABOVE: A Churchill Bridgelayer about to place its bridge in position during a demonstration. This is a Wartime Bridgelayer based upon the chassis on the Churchill Mk. III-IV, however, this photograph was taken after the War. (Ministry of Defence)

BELOW: A fully equipped Churchill Bridgelayer (Bridge tank 30 ft. No. 2). This is the Wartime version on the chassis of the Churchill Mk. III-IV, note the square escape hatch. The No. 2 bridge was narrower than those used on post war Bridgelayers. (R.A.C. Tank Museum).



Churchill Bridgelayers (Bridge, Tank, 30ft. No. 2)- 1942/46
Drawings and Historical research by Arthur J. Goach.

Bridge-laying tanks first appeared just after the First World War when experiments were carried out on a Tank Mk. V**.

Later on, between the wars trials were carried out with a new improved bridge-laying Dragon F.A. Mk. I, converted for the purpose at the Experimental Bridging Establishment, Christchurch. But it was not until World War II that this type of specialised vehicle saw combat.

First, the folding Scissors type Bridgelayers appeared on the Covenanter chassis and later on the Valentine chassis. These were mainly used for training.

The new one-piece bridge was tried successfully on the Churchill chassis in 1942 and from November 1943 three Bridgelayers formed part of the H.Q. Squadron of a Tank Brigade.

Churchill Bridgelayers were used in action in N.W. Europe and in the Italian campaign until the end of the war, when Bridgelayers of this type were gradually replaced with the post-war development mounting the No. 3 bridge on the Mk. VII Churchill chassis. It is this later type of vehicle (11 ZV 03) that is on display at the RAC Tank Museum, Bovington Camp, Dorset, England. The layer mechanism is almost identical to the earlier version, but a wider bridge employing light alloy panels for the trackways is mounted on the vehicle.

The Churchill Bridgelayers consists of turretless Churchill Mk. III-IV tank modified to mount a 34ft. (10.4m) bridge, designed to span a gap of 30ft. (9.15m) and carry a 60 ton tracked vehicle.

The bridge was made up of two trackways of welded steel construction and joined by two diaphragms and a diagonal cross brace. The diaphragms were designed in such a way as to allow the bridge to flex on uneven terrain and were fitted to the trackways at the top ends only by large pins. The diagonal cross brace, of tubular construction was fitted with an eye-bolt and nut at each end

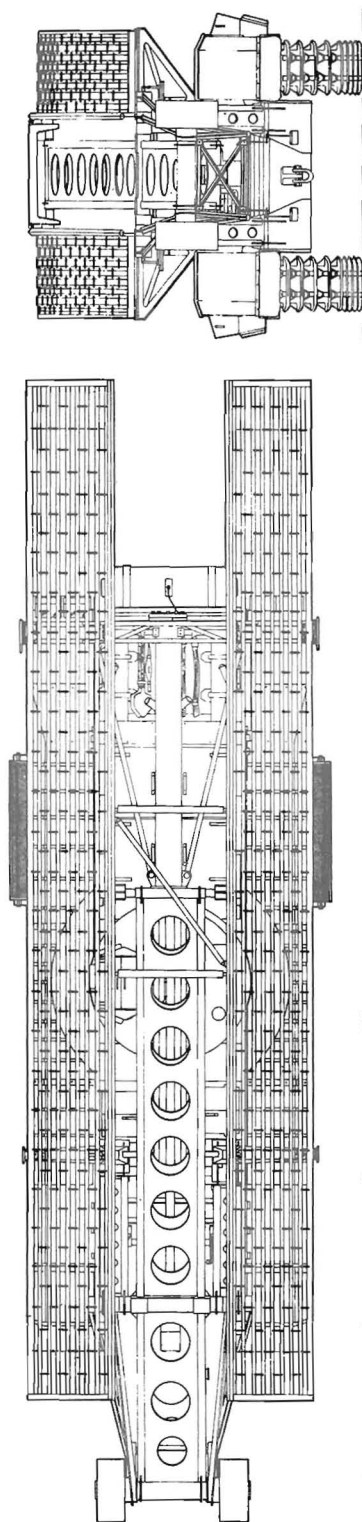
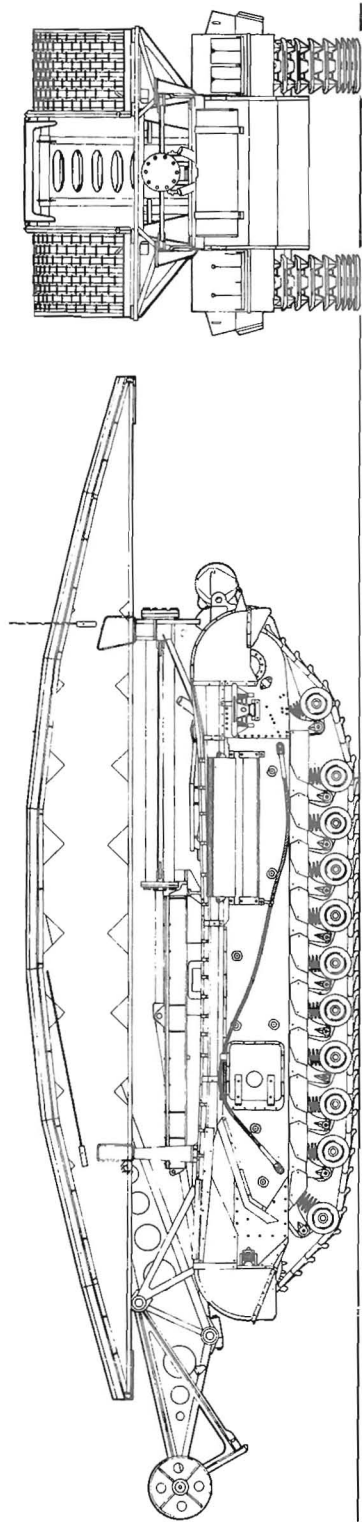
Four gravity operated guide posts are mounted on the bridge to enable vehicles to be guided onto the bridge trackways. The guide posts can be mounted on the inner or outer sides of the trackway, the former if vehicles width was to be restricted. Before laying the bridge the guide posts would normally be transferred to the outer positions by hand, but if this was not possible vehicles using the bridge would fold down the guide posts on contact, returning to the normal position by gravity after the vehicle had passed.

The Bridgelayers vehicle itself is basically a turretless Churchill tank. The turret is removed and replaced by a large two-piece circular cover bolted to the hull. Onto this cover is welded a fixed cupola of near-hexagonal shape with a pair of access doors hinged to its roof. Vision blocks with visors are mounted on four sides.

The bridge laying mechanism is powered by a large hydraulic ram mounted horizontally over the rear part of the vehicle hull. The end of the piston rod is supported in a cross-head running in a slide frame above the centre part of the hull. A connecting rod is pivoted at one to the cross-head, and the other end to the launching arm; a long triangular shaped box section structure of welded steel. At the top of the launching arm is a pivot which engages into inverted 'U' blocks, one on each of the bridge trackways. The bottom end of the launching arm is pivoted to the roller frame, at the roller end. The other end of the roller frame is pivoted to the pivot brackets, each of which is mounted on the forward end of the hull in two places. A fourth pivot on the launching arm shares a common axis with the roller frame and the pivot brackets.

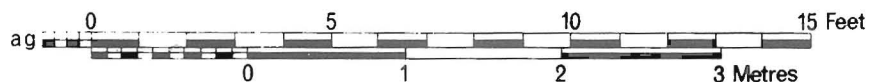
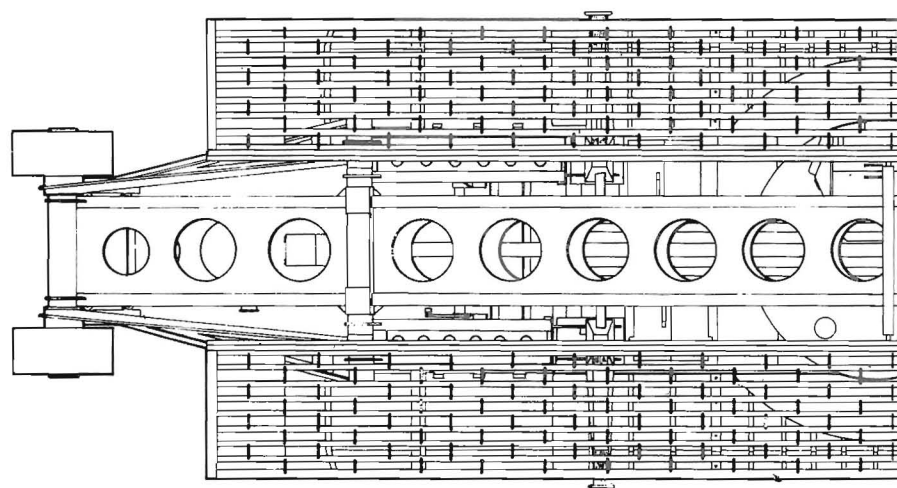
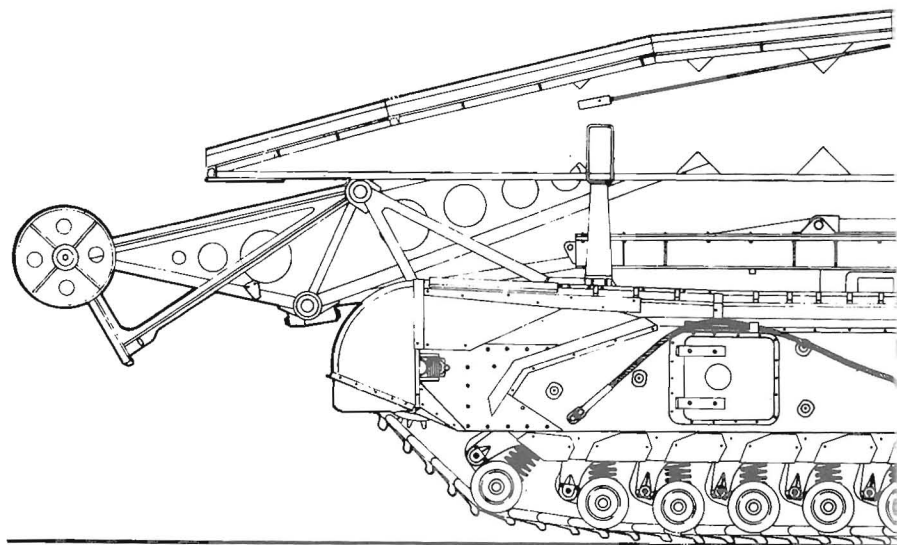
Front and rear bridge supports are mounted on the hull.

Hydraulic power for the ram comes from a hydraulic pump driven from the vehicles' main engine via a power take-off shaft from the front of the engine, which then passes through a clutch, a 2½:1 reduction gear-box and flexible coupling. The pump delivers 30 gallons per minute at 1600 lbs/sq. in. (112.4 Kg/sq. cm.) with the engine running at 200 rpm. This equipment is mounted in the fighting compartment, with the hydraulic oil tank to the left of it and the Commander to the right. The other crew member is the Driver/Operator.

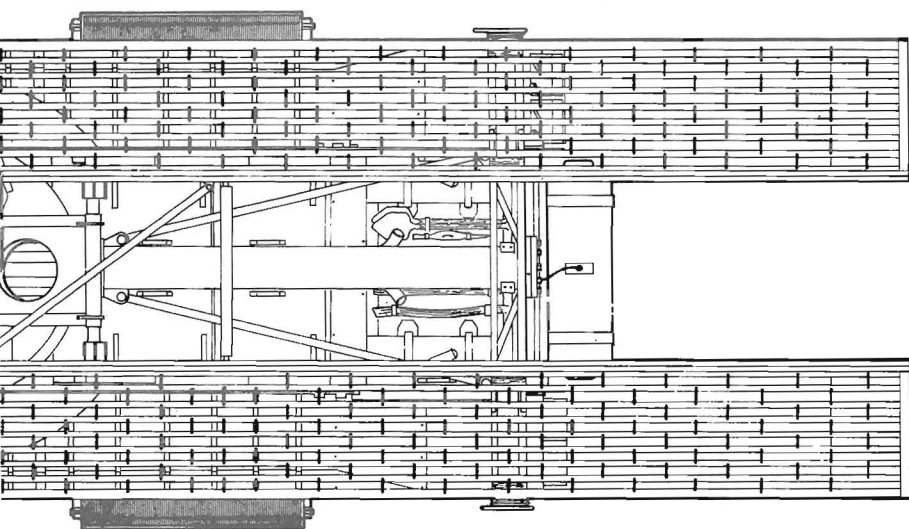
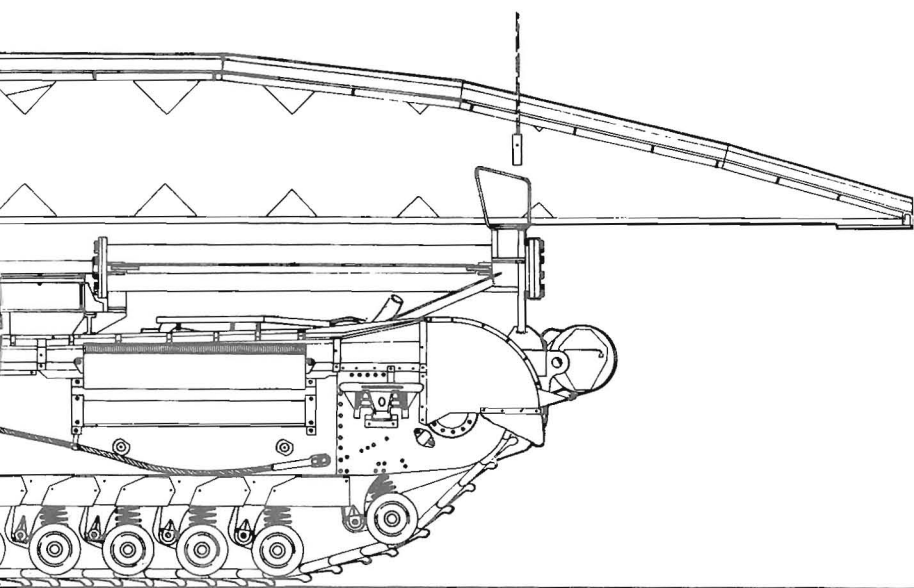


Scale 1:76 (4mm to 1 foot)

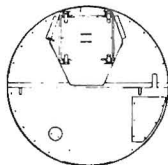
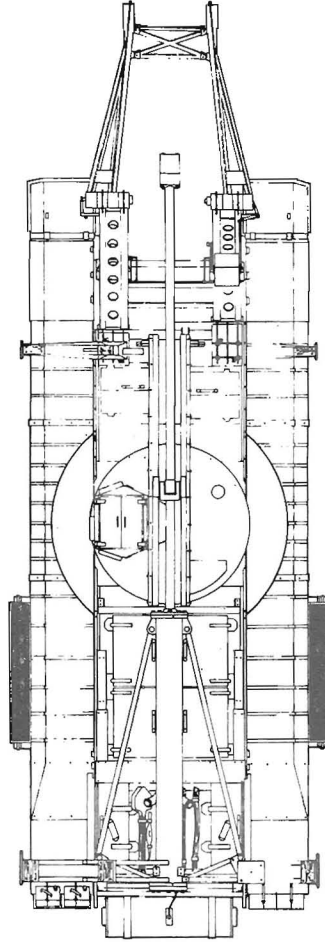
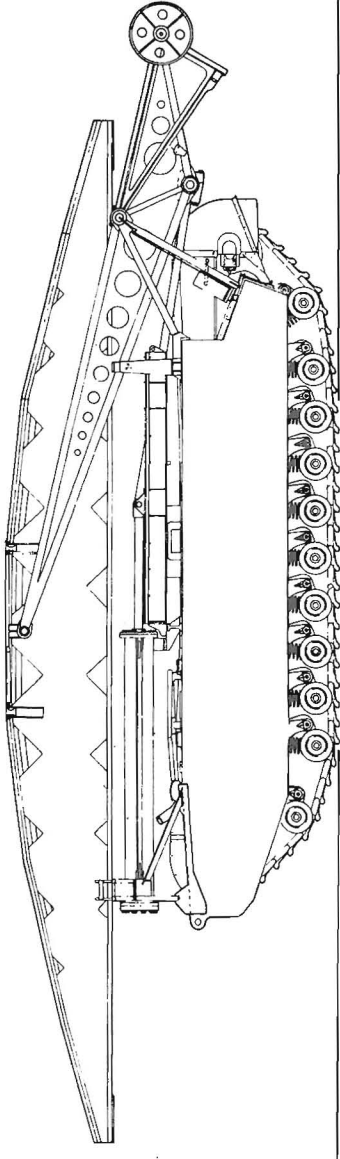
Churchill Bridgelayer



Scale 1:48 ($\frac{1}{4}$ " to 1' 0")



Churchill Bridgelayer



Scale 1:76 (4mm to 1foot)

Churchill Bridge layer

To launch the bridge the power take-off clutch is engaged allowing the hydraulic oil to be put under pressure and the main control valve turned to the launch position, whereupon oil is forced into the forward end of the cylinder, pushing the piston towards the rear end of the cylinder. This motion causes the launching arm to raise the bridge by pivoting on its common axis with the roller frame and continues until the launching arm is vertical, when the roller frame butts up to the lower nose plate on the vehicle hull. Immediately this position is reached a cam, located on the side of the launching arm, trips the catch operating lever.

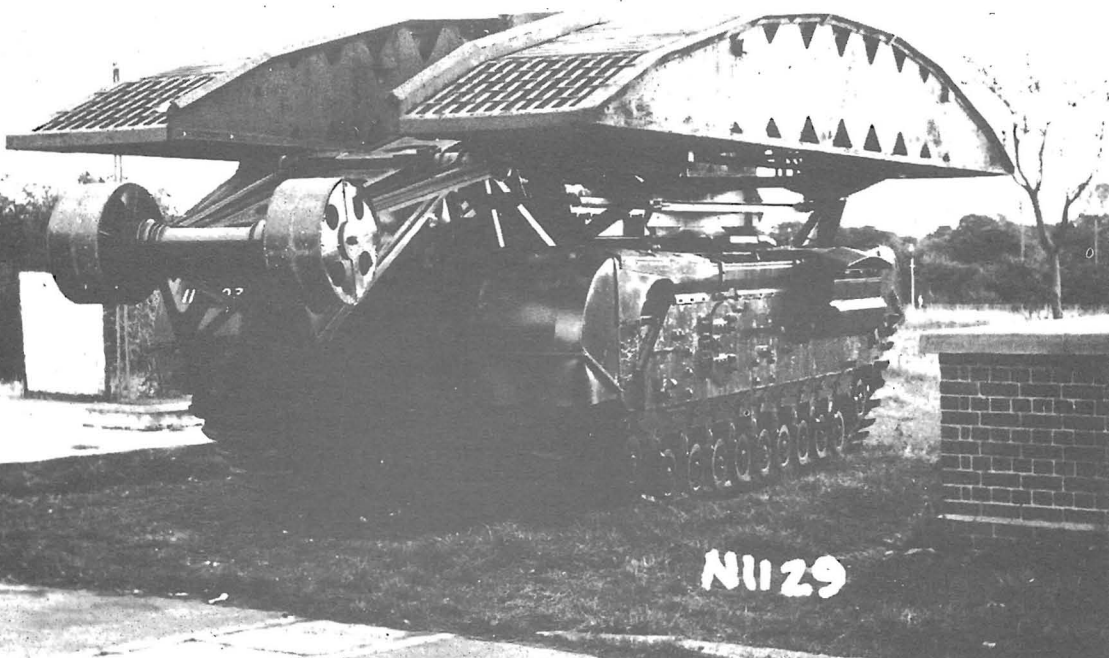
The catch operating lever is mounted on the side of the catch control box; itself mounted on the lower left pivot bracket. When the catch operating lever is tripped, the top catches disengage the launching arm pivot points from the pivot brackets at the same instant that the bottom catches engage, locking the roller frame to the lower nose plate. At this same moment, the forked end of the piston rod reaches the end of its travel and trips another mechanism which changes the direction of flow of the hydraulic oil from the front end of the cylinder to the rear end, thus pushing the piston forward, and lowering the bridge, the launching arm now pivoting about the roller axis. The top and bottom catches are a safety device to enable the vehicle to launch and recover its bridge in conditions of uneven terrain and prevent the bridge falling back on the vehicle during laying or falling back to the ground during recovery.

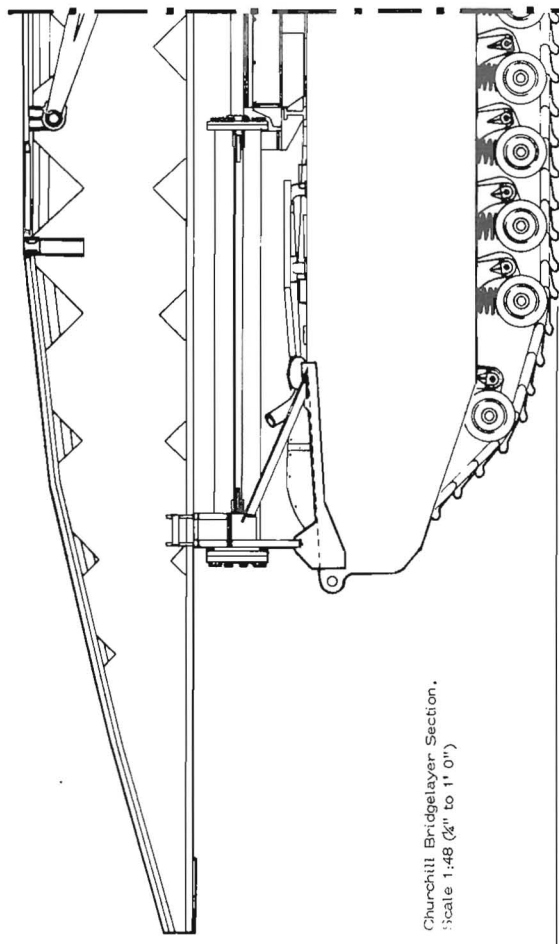
After the bridge has reached the ground the launching arm is lowered a little further to release the pivot pins from the inverted 'U' blocks. The vehicle then withdraws and stows the launching arm to its rests, occupying approx. the same position it did prior to launching. Recovery of the bridge is carried out in reverse to the above procedure.

Both the laying and recovery cycles each take 1 min. 35 secs.

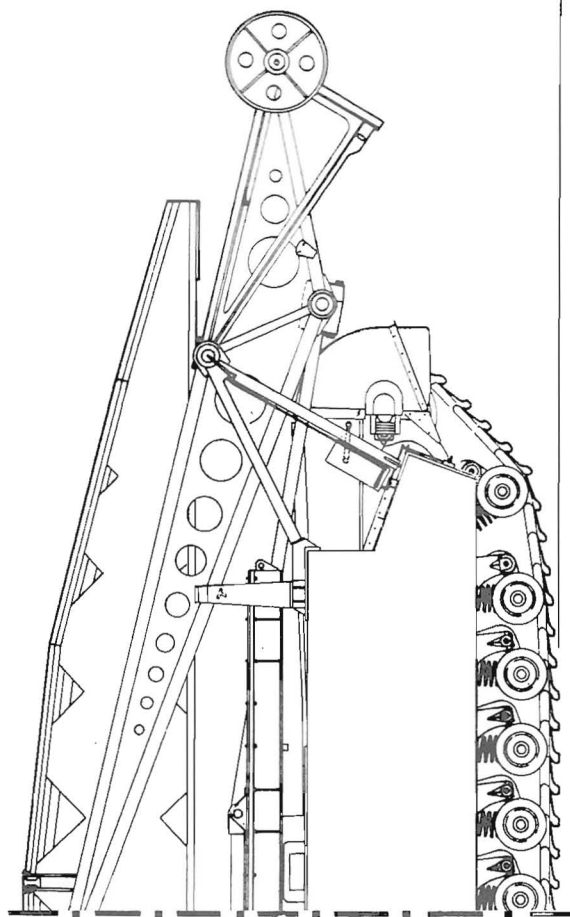
Vauxhall Motors reworked 76 early mark Churchill tanks into Bridgelayers and a further 23 were reworked by Rushton Bucyrus.

Records conflict as to whether it was the Birmingham Railway Carriage & Wagon Co. or the Gloucester Carriage & Wagon Co. who built the Churchill Bridgelayers pilot T 67865.





Churchill Bridge-layer Section.
Scale 1:48 (1/2" to 1' 0")



Technical Specification for Churchill Bridge-layer (Bridge, Tank 30 ft. No. 2).

Crew: 2 Commander, Driver/Operator
Weight, combat loaded: 91,302 lbs.
40.76 Long Tons, 45.65 Short Tons
41.41 Tonnes

Performance:

Speed, Max. Road: 15 mph (24.14 Km/h)
Fording Depth: 3' 0" (91 cm)
Ground pressure: 13.8 lb/sq. in. (9.7 Kg/sq. cm)
Power to weight ratio: (gross) 8.59 HP/ton

Dimensions

Length overall: with 37' 6" (1143 cm)
without 30' 11" (942 cm)
Length: vehicle only 24' 13/8" (735 cm)
Width: overall Across
louvres 10' 8" (325 cm)
Width: across track guards

9' 5" (287 cm)
Height: with 11' 1" (338 cm)
without 10' 5" (317 cm)
Ground clearance: 1' 8" (51 cm)

Road wheel dia: 13 x 9 3/4 x 2" (33 x 24.75 x 5 cm)

Trackwork

Centres: 7' 2 1/2" (220 cm)
Base: 12' 6" (381 cm)
Width: 1' 10" (56 cm)
Pitch: 7.96" (cm)

Number of links per track:

72
Spudded double rail section.

Type:

Mechanical Details

Engine:

Bedford twin six, 12 cylinder
Horizontally opposed side valve.
Normally aspirated gasoline, spark
ignition, liquid cooled.

Bore and stroke: 5" x 5 1/2" = 1529 cu. in. (127mm x
139.7 mm = 21237 cc)
Compression Ratio: 5.5:1 350 bhp @ 2200 rpm
Transmission: 18 in. S.P.D. Clutch

Marriott-Brown H4 gear/steering
box 4F & 1R speeds. Rear twin ring
sprocket 29, 1" P.C.D. x 23 teeth.
Steering: Controlled differential
Suspension: Independently sprung bogies each side
Internal fuel capacity: 150 Imp. gals.
180 U.S. Gals, 682 Litres

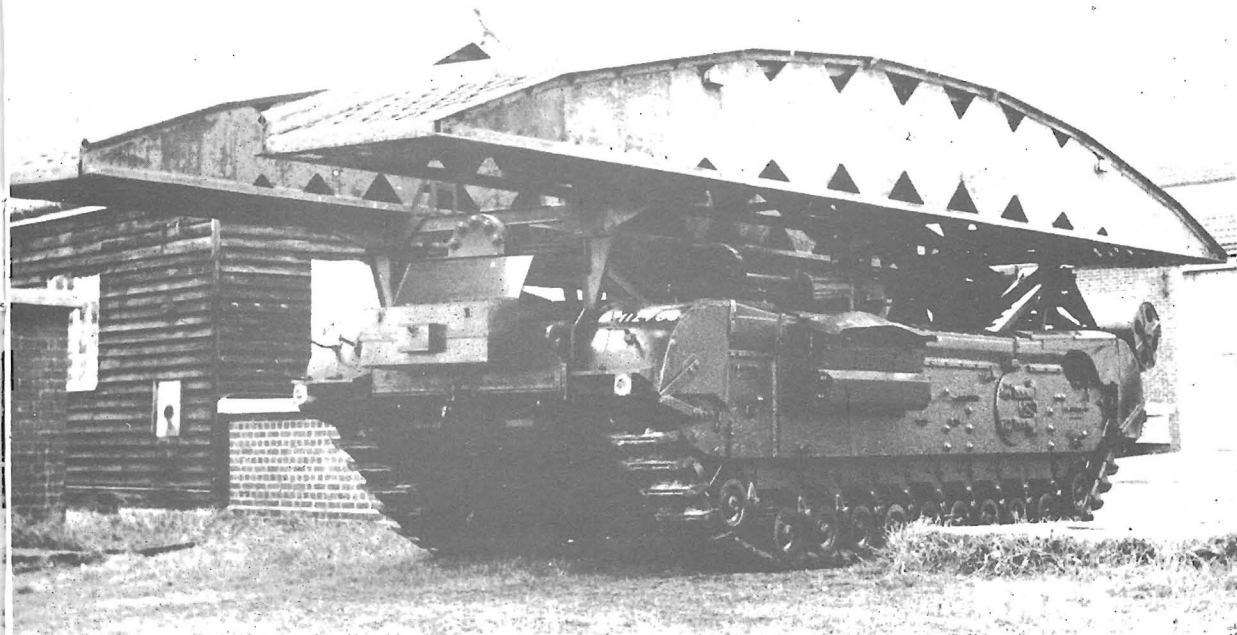
Armour

101 max. 16 min.
Bolted riveted rolled sheet plates.
Type:
Hull: 0.348" (89 mm)
Nose: 0.144" (38 mm) at 70 degrees
Glas plate: 0.396" (101 mm) at 0 degrees
Drivers plate: 0.288" (76 mm) at 0 degrees
Sides: 0.240" (64 mm) at 0 degrees
Rear, upper: 0.048-0.072" (15-19 mm) at 90 degrees
Decking: 0.072" (19 mm) at 0 degrees
Belly, front:
rear:

Bridge

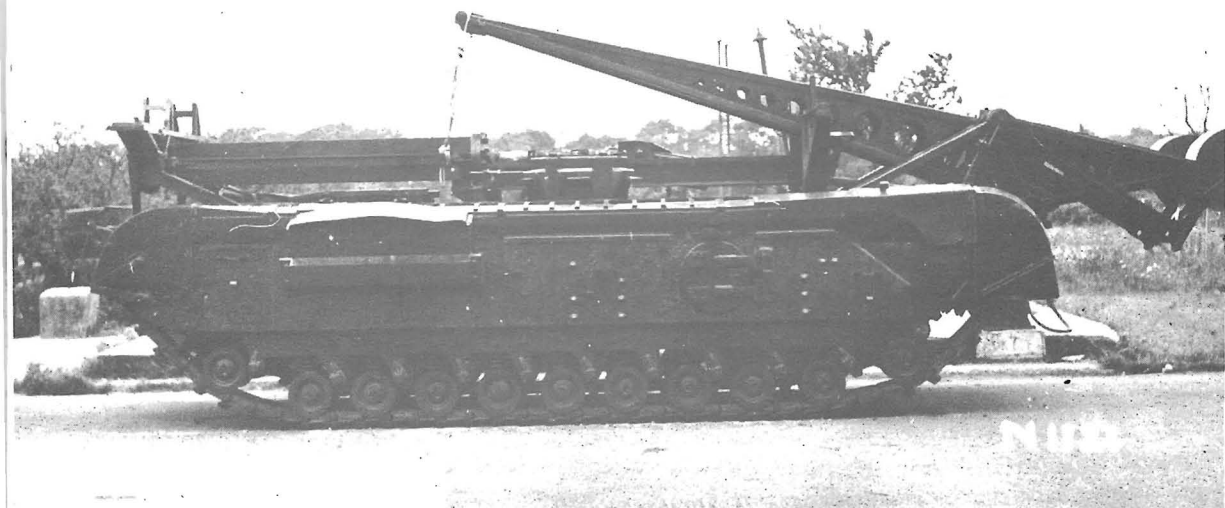
Overall length: 34' 0" (1036 cm)
Depth: 3' 6" (109 cm)
Clear span: 30' 0" (914 cm)
Width overall: 9' 6" (290 cm)
Width of trackway: 3' 8" (112 cm)
Launch or recovery cycle 1 min. 35 sec.

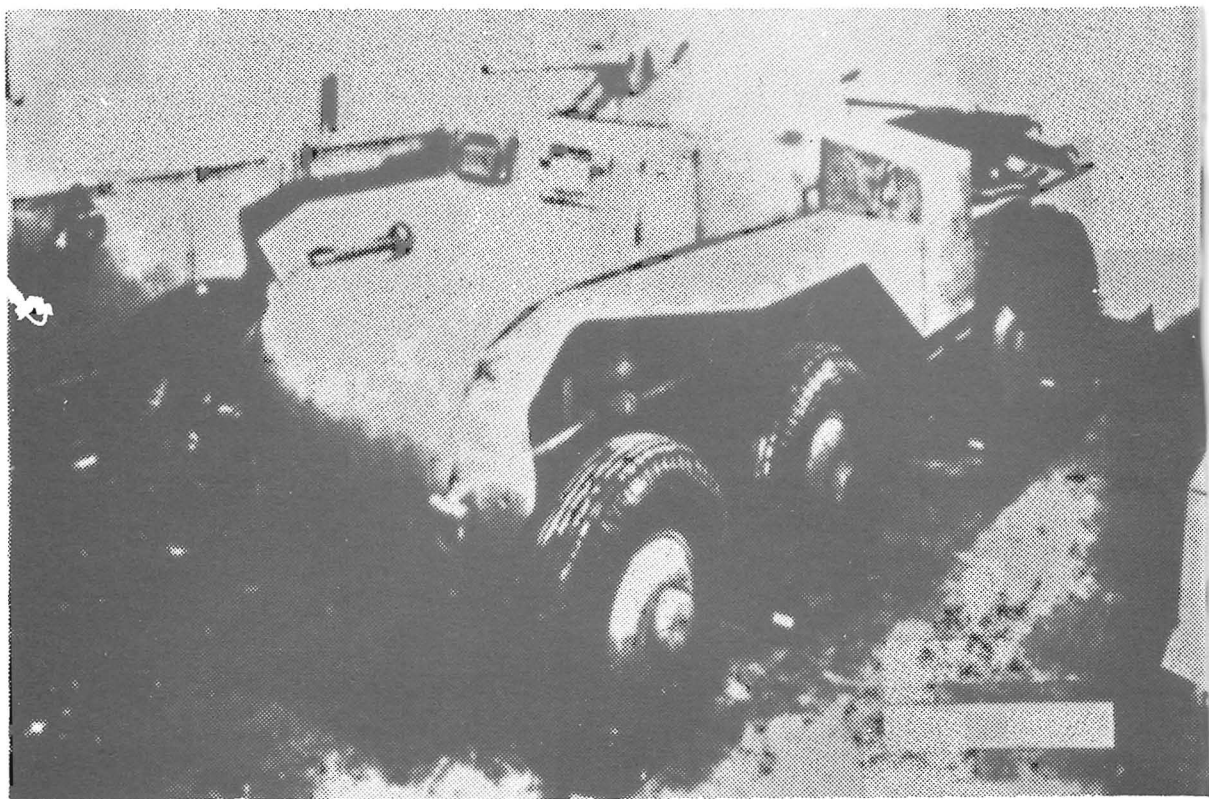
With denotes with Bridge mounted
Without denotes without Bridge mounted



ABOVE: Rear view of the Churchill bridgelayer at the R.A.C. Tank Museum, Bovington, England. Note that the chassis of this post-War vehicle is a Churchill Mk VII.
(Bellona War pics)

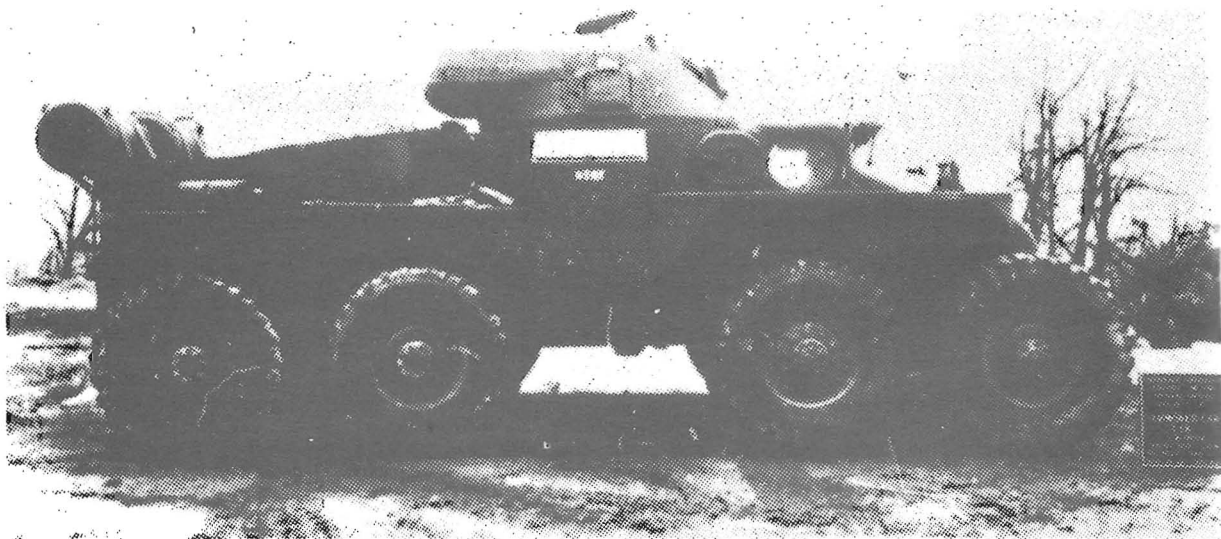
BELOW: Side view of a Churchill Bridgelayer based on the chassis of a Churchill Mk VII. With the bridge removed the details of the launching mechanism can be seen. Note the commanders cupola in the position of the turret.
(Bellona Warpics)





ABOVE: The wooden mock-up of the T-18 series. The most significant features were the small turret and use of a 37mm gun. (U.S. Official).

BELOW: The T-18 pilot vehicle fitted with the small turret. This vehicle was extensively tested at the General Motor Proving Ground in July 1942. No armament was fitted at the time but the small turret was to have carried a 37mm gun. (U.S. Official).



ARMORED CAR T.18E2 'BOARHOUND' - 1941/43 Series 25. No. 97(US)

Drawings and Historical research by Phil Dyer.

In 1937, as the United States Forces had decided there was no requirement for vehicles described as 'Armored Cars', these had been deleted from the Book of Standards. The main reason for this was to avoid a multiplicity of vehicles to perform the same function. The United States had already evolved a Light relatively fast Tank, and this, together with the M2 Scout Car, and the half tracks under development, it was felt would meet all service requirements.

Interest was revived in Armored Cars in 1940 due mainly to the type of Warfare taking place in North Africa between Commonwealth troops and the Italians. In view of the vast distances involved, armoured cars with their large radius of action and more comfortable suspension (Compared to Tanks) were used with good effect by both sides.

A number of projects were started upon in the United States, but it was only in July 1941 that a program was instituted to develop Armored Cars based upon British battle experience. It was the aim to produce both a medium and a heavy vehicle that would be suitable for use by both the British and American forces.

The specifications for both armored cars called for all wheel drive and a 37mm gun in a fully rotating turret. The Medium armored car was to have an armor basis of 1½" front and from ¾" to 7/8" elsewhere, whereas the Heavy vehicle was to have an armor basis of 2" front and 1" to 1½" elsewhere, and was to have stowage for more ammunition.

To cover various alternatives at the same time the Medium Armored Car specification allowed for either a four or six wheeled vehicle. It is not thought that any specific wheel configuration was specified for the heavy armored car, although it was hoped that it would have similar dimensions to the Medium. The Medium Armored Car evolved in the T.17 series and eventually became the British Staghound.

One of the manufacturers submitting tenders for the Heavy Armored Car was the Yellow Truck and Coach Company a subsidiary of General Motors. Two alternative designs by them projected both an eight wheeled vehicle with orthodox leaf spring suspension, and a six wheeled vehicle with independent suspension. Both designs looked promising and contracts were placed for two pilots of each design. The eight wheeled vehicle was designed T.18, and the six wheeled vehicle T.18E1: pilots were never completed due to a development project for a six wheeled armored car in the Medium class being initiated in January 1942, designated the T.19. In order to save duplication of effort the T.18E1 project was terminated.

A wooden mock up of the T.18 was completed early in December 1941. In the interim it had been decided that a more powerful gun was required than the 37mm specified. At a meeting of the British Tank Mission and the United States Tank Committee the British 57mm 6pdr gun was decided upon. Authority was given to modify the second pilot to mount this armament, the designation for this pilot being changed to T.18E2. The turret from the Light Tank T.7E2 together with the 6pdr and mounting was supplied from Rock Island Arsenal in May 1942 for use on the T.18E2.

The T.18 pilot armed with the 37mm was delivered to the General Motors Proving Ground in July 1942 for flotation tests. Instead of testing the vehicle as built it was loaded to simulate the weight of the T.18E2 to test the performance of the heavier vehicle. The increased weight made it necessary to fit 14,00 x 20 tyres instead of the 12,00 x 20 originally fitted. In October 1942 the T.18 pilot was returned to the manufacturer for use in engineering development work on the T.18E2.

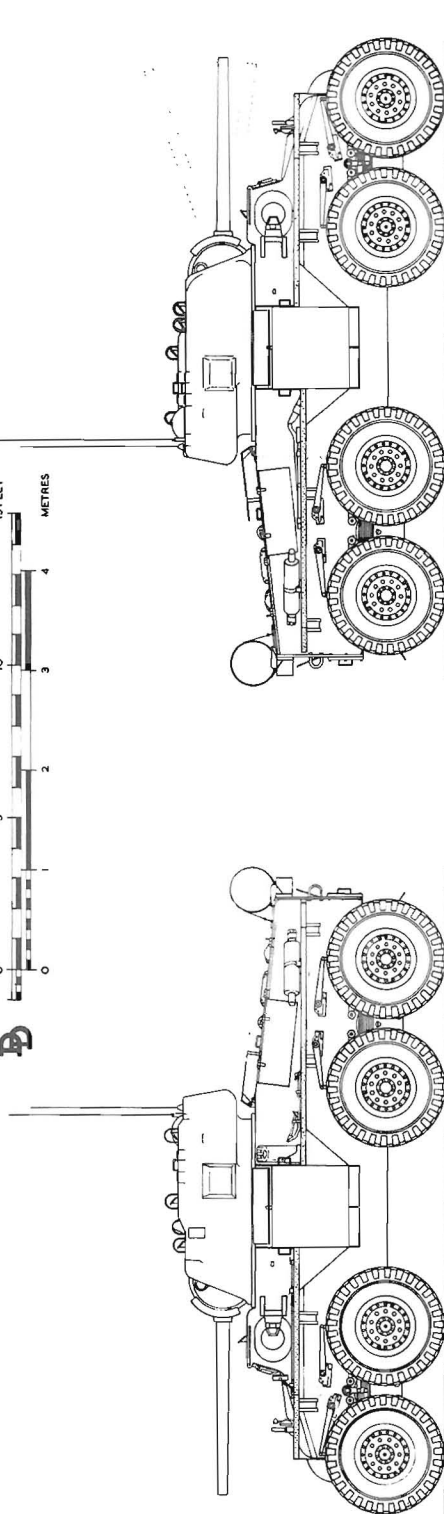
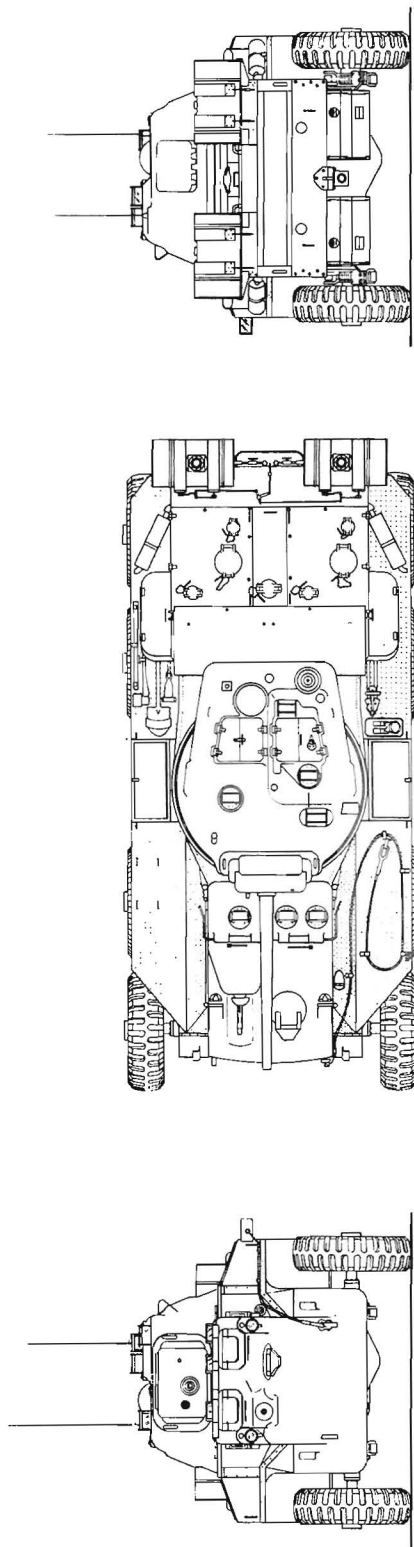
As completed the T.18E2 was considerably heavier than anticipated. The original proposed maximum weight of a heavy armored car was 32,000lb. When the wooden mock up was completed the estimated weight had risen to 36,000lb. By the time the T.18E2 was completed the actual weight was 53,000lb.

Together with other armored cars the T.18 and T.18E2 were tested by the Special Armored Vehicle Board, in November 1942 which reported that in general the weight and dimensions of these vehicles were in excess of those desired. None of the using arms represented on the board desired such a vehicle, so it was unanimously recommended that the projects be cancelled.

Originally a provisional production order had been placed for 2,500 vehicles in February 1942. This was increased to 2,800 vehicles in March 1942. By the time production was to start the Desert Campaign was drawing to a close and even the British requirement had diminished. In view of the work carried out in tooling up and setting up a production line it was decided that a limited number of vehicles be built for Britain. The T.18E2 pilot was shipped to Britain for test purposes followed by the 30 production vehicles in the spring of 1943. In accordance with British policy at the time of giving names to American Armored Vehicles supplied to them the T.18E2 was christened 'Boarhound'.

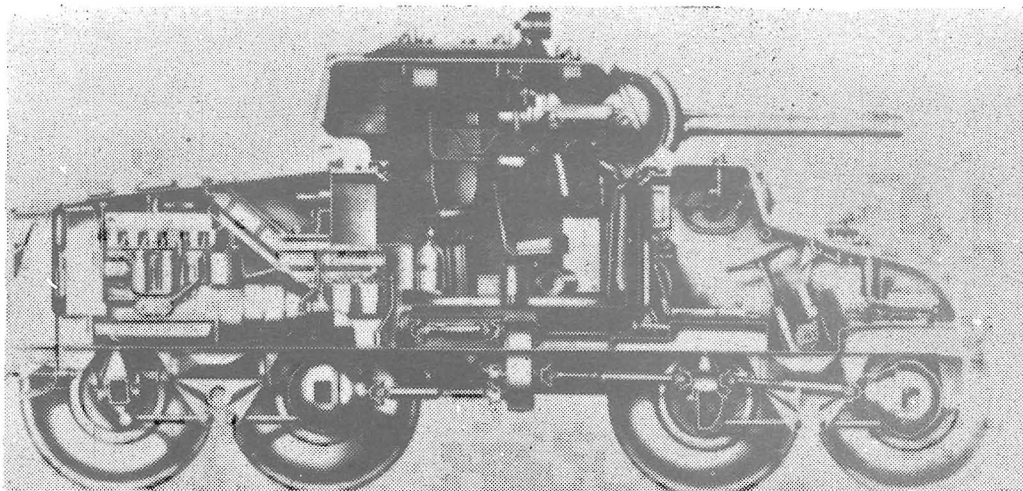
The North African campaign for which they were intended having ended, and being too large for use in the European theatre of operations they were never used in action. Test reports show that even had there been a requirement for a heavy armored car at the time the Boarhound was ready for production numerous improvements would have been necessary. In the main the cross country capabilities were unsatisfactory, so even if the detail faults had been rectified it would still not have been ideal. The drawings (other than the section) are of the only known remaining example of the Boarhound which is preserved at Bovington Tank Museum. This has been fitted with a Mk V 6pdr with a calibre length of 52. It is thought that as produced all Boarhounds would have been armed with the Mk III 6pdr of which 200 were supplied to the United States in April 1942 for fitting in the Light Tank T.7E2. The Mk III 6pdr was 16" shorter and only had a calibre length of 45 with a corresponding lower muzzle velocity.

In January 1944 the British Army Staff Advised that no further spare parts were required for the Boarhound and it was therefore declared obsolete.



Scale 1:76 (4mm to 1 foot)

T18E2 Boarhound Armoured Car

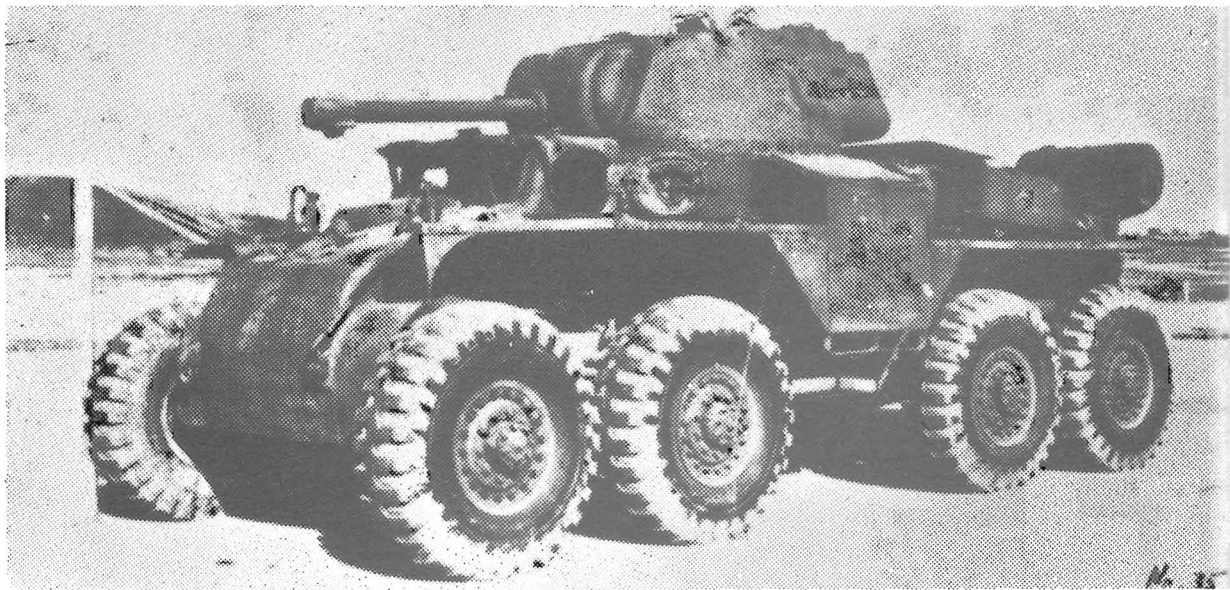


T.18E2 Boarhound Armoured Car Section.

Scale 1:48 (¼" to 1' 0")

Technical Specification for Armoured Car T18E2 'Boarhound'

Crew:	5	Stowage	
Weight, combat load:	53,000lbs. 23.66 Long tons, 26.5 Short tons 24.04 Tonnes	Ammunition; main arma- ment:	68 rds.
Performance		Ammunition; secondary armament:	5750 rds.
Speed, max. road:	50 mph (80.45 Km/h)	Internal fuel capacity:	75 imp. gals. 90 U.S. gals, 341 Litres.
Max. gradient:	65%	Long range fuel tanks:	2 x 30 U.S. gals.
Step:	2' 0" (61 cm)	Armour	
Ground pressure:	17lbs/sq. in. (1.20 Kg/sq. cm.)	Type:	Homogenous cast nose and front. Homogenous rolled remainder. Welded construction
Range, (internal fuel), road:	300 miles (483 Km)	Hull, Nose:	2" (50 mm) basis
With long range fuel tanks	500 miles (805 Km)	Glasis plate:	2" (50 mm) basis
Dimensions		Drivers plate:	2" (50 mm) at 18 degrees.
Length overall:	20' 6" (625 cm)	Sides, Adjacent to crew compartment:	1½" (31.7 mm) vertical.
Width overall:	10' 1" (307 cm)	Sides of engine compartment:	1" (30.48 mm) vertical.
Height:	8' 5¼" (257 cm)	Rear, upper:	½" (12.5 mm) horizontal
Ground clearance:	11" (27 cm)	Decking:	¾" (18.9 mm) horizontal
Fire height of gun:	7' 4" (223.5 cm)	Engine covers:	¾" (18.9 mm) at 84 degrees
Turret ring dia:	5' 0" (152 cm)	Belly:	3/8" (9.4 mm) horizontal
Tyre size:	14.00 x 20	Turret, Front:	2" (50 mm) at 22½ degrees
Tread:	8' 6" (259 cm)	Sides:	1½" (38.1 mm) at 22½ degrees
Wheelbase:	16' 6" (502 cm)	Rear:	1½" (38.1 mm) at 10 degrees
Mechanical details		Roof:	¾" (18.9 mm) horizontal
Engine:	2 x G.M.C. 270, 6 cylinder in line, petrol, water-cooled 125 HP each at 3,000 rpm. Torque converter.	Mantle:	2" (50 mm) curved
Transmission:		Vision:	Direct vision for driver and assistant driver when convenient. 2 periscopes M5 driver. 1 periscope M6 assistant driver. 2 periscopes M6 commander. 1 periscope M3 loader 1 periscope M4 gunner. 1 telescope T4 gunner
Steering:	Front four wheels, hydraulic arrested.	Communication	Interphone for all crew members
Suspension:	Some Elliptic springs with hydraulic dampers.	Ventilation	Wireless No. 19 (British) Fan roof of turret reversible.
Armament			
Main:	1 x 6pdr Mk. III in T.63 mount stabilised in elevation.		
Calibre, and length in calibres:	57 mm (2.244 in.), L43		
Traverse:	360 degrees. Operation: Hand and hydraulic (Loganport).		
Elevation:	plus 20 degrees, minus 8 degrees.		
Secondary armament:	.30 cal mg M1919A4 coaxial .30 cal mg M1919A4 flexible bow. 2" smoke mortar.		



ABOVE: The 'production' model of the T.18E2, photographed during tests at the end of 1942 by which time the requirement for such a vehicle had diminished.
(U.S. Official).

BELOW: The rear view of the only T.18E2 known to survive today. This is one of the 30 shipped to England and called 'Boarhound' by the British. It is on display at the R.A.C. Tank Museum, Bovington, England.
(D.P. Dyer Photograph).

